Licensible Technologies

INFICOMM—Reflective Wireless Communications System

Applications:

- RFID applications range from battery-less, chip-less RFID tags to wireless keyboards, mice, and remote controls (for TVs, cordless phones, garage door openers, etc.)
- Remote Sensors
- Medical applications
- Oil and gas exploration

Benefits:

- Eliminates RF emissions from remote units
- Minimizes impact of battery disposal on the environment
- Reduces wireless remote unit manufacturing costs
- Provides essentially unlimited usage time
- Minimizes cost and impact of distributed-communication installation
- Transmits with a range of up to 1–2 km

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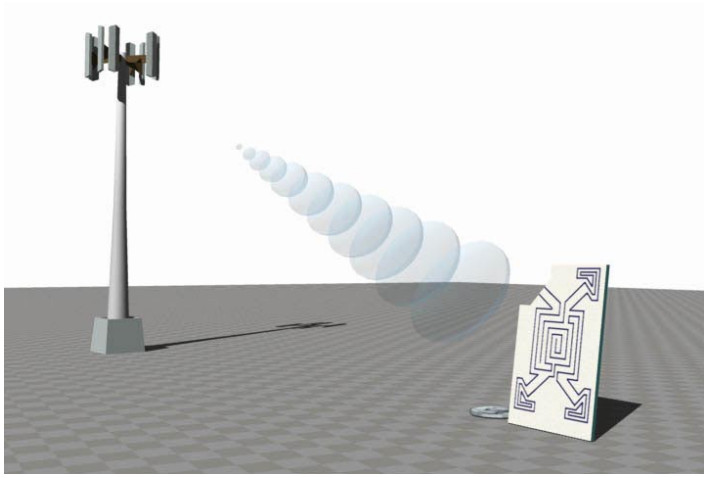

Our wireless receiver-reflector device modulates and reflects the transmitter-receiver base unit's radio-frequency carrier wave to complete half the "conversation." The other half is transmitted from the base unit using conventional techniques.

Summary:

Los Alamos National Laboratory's INFICOMM technology was originally developed by the Department of Defense for covert communications. It is a proven technology that has been used to transmit video images across distances of 1–2 kilometers. Following declassification, the technology is now available for commercial development. It works on a principle similar to the way a mirror works, i.e., a communications signal is reflected off an object (antenna) and manipulated so that, when reflected, it carries information from the reflected source.

INFICOMM eliminates the need for a microchip or battery in radio-frequency identification (RFID) tags. All parts of INFICOMM RFID tags and antennae can be printed with conductive inks, significantly reducing the cost per tag compared with other RFID tags. With the explosion of wireless infrastructures in developing countries, the market for RFID alone is predicted to be $7 billion by 2008.

Development Stage:

While this technology is still in development stage, LANL researchers have already transmitted video images using modulated-reflectance technology over several kilometers.

Patent Status:

US Patent 6,434,372 Long-Range, Full Duplex, Modulated-Reflector Cell Phone for Voice/Data Transmission

Other patents pending

Licensing Status:

Although a major US oil company has made a significant investment in this technology for oil and gas applications, other fields of use are still available for licensing.

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